(19) World Intellectual Property **Organization**

International Bureau





(43) International Publication Date 21 April 2005 (21.04.2005)

PCT

(10) International Publication Number WO 2005/034951 A1

(51) International Patent Classification⁷: A61P 1/04

A61K 31/44,

(21) International Application Number:

PCT/US2004/032099

(22) International Filing Date: 1 October 2004 (01.10.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

US 60/508,356 3 October 2003 (03.10.2003) 60/513,880 22 October 2003 (22.10.2003) US

- (71) Applicant (for all designated States except US): ALLER-GAN, INC. [US/US]; 2525 Dupont Drive, Irvine, CA 92612 (US).
- (72) Inventors; and
- Inventors/Applicants (for US only): SHEN, Jie [CN/US]; 137 Giotto, Irvine, CA 92614 (US). WELTY, Devin, F. [US/US]; 37 Tessera Avenue, Foothill Ranch, CA 92610 (US). TANG-LIU, Diane, D. [US/US]; 2615 Blackthorn Street, Newport Beach, CA 92660 (US).

- (74) Agents: JONHSON, Brent, A. et al.; c/o Allergan, Inc., 2525 Dupont Drive, Irvine, CA 92612 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND COMPOSITIONS FOR THE ORAL ADMINISTRATION OF PRODRUGS OF PROTON PUMP **INHIBITORS**

(57) Abstract: Oral dosage forms, methods of treating diseases or adverse conditions, and methods of inhibiting gastric acid secretion related to prodrugs of a proton pump inhibitor are disclosed herein. Certain embodiments relate to the membrane permeability of the proton pump inhibitor and/or the membrane permeability of the prodrug. Other embodiments relate to prodrugs comprising an acidic functional group and a sulfonyl moiety. In other embodiments, the prodrug is a carboxylic acid which comprises a phenylsulfonyl moiety. Other embodiments relate to the pH of dosage forms and dosage forms comprising salts of acidic functional groups.